Formal and Informal Documentation

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1. Accepted conference papers

- Spatial Indexing for Scalability in FCA

  (full article held back from web release on personal site at current).

  Published in

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  The Fourth International Conference on Formal Concept Analysis (ICFCA
  2006)
  Dresden, Germany,
  February 13-17 in 2006
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  Conference website

  Abstract

  The paper provides evidence that spatial indexing structures offer faster resolution of Formal Concept Analysis queries than B-Tree/Hash methods. We show that many Formal Concept Analysis operations, computing the contingent and extent sizes as well as listing the matching objects, enjoy improved performance with the use of spatial indexing structures such as the RD-Tree. Speed improvements can vary up to eighty times faster depending on the data and query. The motivation for our study is the application of Formal Concept Analysis to Semantic File Systems. In such applications millions of formal objects must be dealt with. It has been found that spatial indexing also provides an effective indexing technique for more general purpose applications requiring scalability in Formal Concept Analysis systems. The coverage and benchmarking are presented with general applications in mind.

- Applying Formal Concept Analysis to Semantic File Systems Leveraging Wordnet

  Published in

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  Proceedings of the 10th Australasian Document Computing Symposium,
  Sydney, Australia,
  December 12, 2005.
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  Conference website

  Abstract

  FCA can be used to obtain both a natural clustering of documents along with a partial ordering over those clusters. The application of FCA requires input to be in the form of a binary relation between two sets. This paper investigates how a semantic filesystem can be used to generate such binary relations. The manner in which the binary relation is generated impacts how useful the result of FCA will be for navigating one's filesystem.

- Formal Concept Analysis and Semantic File Systems

  (full article held back from web release on personal site at current).

  Published in

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  The Second International Conference on Formal Concept Analysis (ICFCA
  04)
  Sydney, Australia,
  February 23-26 in 2004
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  Conference website

  Abstract

  This document presents and contrasts current efforts at applying Formal Concept Analysis (FCA) to some semi structured document collections and file systems in general. Existing efforts are then contrasted with ongoing efforts using the libferris Virtual File System (VFS) as a base for FCA on file systems.

- File system wide file classification with agents

  Published in

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  Proceedings of the 8th Australasian Document Computing Symposium,
  Canberra, Australia,
  December 15, 2003.
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  Conference website

  Abstract

  Many semi structured information systems such as file systems and email clients allow data to be tagged as belonging in many categories. Some such systems support notions similar to emblems, where files can be semantically tagged as fitting into a broad category by associating a file with an emblem. This paper presents a file system that makes use of Supervised machine learning for the creation of agents to offer fuzzy assertions and retractions of semantic tags on a per file basis. Such assertions are then subject to a belief resolution system to obtain an overall picture for a file's emblem attachments.

2. Informal documentation

- Linux Kongress 2005 paper An overview of the system as well as using it for indexing and search.
- FerrisNotes Gives a reasonable introduction to libferris and details some of the indexing

in it, leads into using libferris to perform Formal Concept Analysis. Note that this document is not final and you should check back and contribute patches to it.

- Async IO and network fetching with libferris Details on how to perform async IO with libferris and explicit mention of using async io to fetch information from an HTTP site where header information is gleemed from libferris before the contents of the request are read or transfered over the network.
- Design of console and graphical fileutils clients for libferris This paper details the key interactions of the ferriscp, gfcp, ferrismv, gfmv, ferrisrm, and gfrm clients with the ferris and ferrisui shared libraries. These clients accept the same command line options as the fileutils cp, rm and mv programs. Where API changes in the core library are anticipated they are mentioned in this paper so that the paper will be relevant to the newer versions of ferris as well as the current codebase. The paper aims to allow both the maintainer (given time away from the code) and other interested parties enough information to either add to existing clients or start creating new ones.
- CGI invocation of parameterized SQL using XSLT, XML, and Ferris An XSQL like solution for exposing a relational database through server side parameterized SQL queries invoked through XSQL like CGI roundtrips. Ferris is used as the underlying tool to mount SQL queries and expose the results as a Filesystem or DOM.
- XSLT, DOM, SQL and the web The selection of information from a relational database using both SQL and XSLT for delivery on the web. Focus is on the use of Ferris to bring the relational database into the world of XML by mounting either a table or query and presenting that data as parsed XML in the form of a Document Object Model (DOM). The DOM is then transformed into HTML using XSL.
- XML UI: from XSD to XML Exploration of creating XML documents from XSD schema files using a forms based interface is presented. An implementation using Gtk+ 1.3.11, libglade2 and ferriscreate is presented as a case study leading to future trends in XML user interface generation and style.